Contribution ID: **208** Type: **not specified**

The growth with energy of vector meson photo-production cross-sections and low x evolution

Tuesday, 4 April 2017 16:00 (20 minutes)

We investigate the energy dependence of the photo-production cross-section of vector mesons J/Psi and Upsilon on protons. In particular we are interested in the question whether the energy dependence has a description in terms of perturbative low x (i.e. BFKL) evolution or whether a successful description requires to invoke effects related to gluon saturation. To answer this question we study at first exclusive J/Psi and Upsilon production cross-sections and find that (collinear improved) NLO BFKL can provide a very good description of both HERA and LHC data. We will provide a detailed discussion of our result and point out potential observables which might allow to distinguish between low x evolution with and without saturation effects in photo-production processes at the LHC.

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Session Classification: WG2 Low x and Diffraction

Track Classification: WG2) Low x and Diffraction